

The positions of the nests relative to the light were as follows:

4 nests (7, 2, 2 and 1 cells) facing north, toward light.

2 nests, (1 cell) facing south, away from light.

3 nests, (2, 2, 1 cells) facing west, partly away from light.

2 nests, (5 and 2 cells) facing east, partly toward light.

There were, then, six nests made facing the light and five with the openings away from the light.

In another room some 15 wasps were building behind the loose paper on the wall, almost, if not entirely, in complete darkness.

The Neotropical Tipulidae in the Hungarian National Museum (Diptera).—I.

By CHARLES P. ALEXANDER, Ithaca, N. Y.*

(Plate XIV.)

Through the kindness of Dr. Coloman Kertész, I have been able to examine and study the South and Central American crane flies in the collection of the Hungarian National Museum at Budapest. This collection of Tipulidæ, although not containing an unusual number of specimens, included a considerable number of interesting species which will be discussed in this and succeeding papers.

Subfamily LIMNOBINÆ.

Tribe I—LIMNOBINI.

Genus *Dicranomyia* Stephens.

1829. *Dicranomyia* Stephens; Catal. Brit. Ins.; vol. 2, p. 243.

Dicranomyia subdola, sp. n. (Pl. XIV, Fig. 1).

Wings hyaline, veins of the wing margined with brown; tips of the femora yellow; abdomen annulated brown and yellow.

Female.—Length, 7.8 mm.; wing, 10.6 mm.

Rostrum and palpi dark brown; antennæ greyish brown, the flagellar segments much darker, brown; front, vertex and occiput greyish brown with numerous black hairs.

Pronotum brownish yellow, dark brown medially. Mesonotal præscu-

*Contribution from the Entomological Laboratory, Cornell University.

tum yellowish brown, a broad dark brown median stripe extending the length of the sclerite; scutum with the lobes brown, median space brighter, more yellowish; scutellum brown broadly margined with yellowish; postnotum dark brown. Pleuræ broadly dark brown becoming much lighter colored on the sternum. Halteres rather long, base of the stem pale, darkening into brown.

Legs, coxæ and trochanters light yellow, femora yellowish brown darkening toward the tip, the apex broadly yellow, tibiæ and tarsi brown.

Wings subhyaline, a brown quadrangular stigma, narrow brown seams along the cord, at the tip of *Sc* and along *Rs*, on the outer deflection of cell 1st *M*₂ and less distinctly along most of the longitudinal veins. Venation, (see plate XIV, fig. 1) *Sc*₁ ending beyond the origin of *Rs*, *Sc*₂ also beyond *Rs*, its length about equal to *Sc*₁, basal deflection of *Cu*₁ about at the fork of *M*.

Abdomen, tergites with the basal half of each segment dark brown, the apical half abruptly yellow; sternites similar beyond the first segment.

Holotype, ♀, Callanga, Peru, in the Hungarian National Museum.

Closely related to *andicola* Alexander, of Bolivia (Can. Ent.; vol. 44, pp. 362, 363; pl. 11, fig. h), differing in the lack of lateral præscutal stripes, much more extensive brown pattern on the wings, position of *Sc*₂, etc.

Dicranomyia tricincta, sp. n.

Wings with a reticulated pattern, a supernumerary cross vein in cell *R*₃; femora with three subequal, equidistant brown rings.

Male.—Length, about 7-7.5 mm.; wing, 10.3 mm. Hind leg, femur, 8.8 mm.; tibia, 9 mm.; tarsus, 5.7 mm.

Closely related to *D. muscosa* End.¹ of Ecuador, differing as follows: Head rich brown without a yellowish tinge; legs with the femora light yellow with three broad equidistant brown bands, the first premedian, the second postmedian, the last subapical, these annulations occurring on all the legs, tibiæ a little darker at the tip, two terminal tarsal segments brownish. In *muscosa*, the legs are bright greenish yellow, the apical third of the femora yellowish, before the tip with a broad pale grey ring, tibiæ and tarsi bright brownish yellow. With *muscosa* it agrees in its irregularly reticulated wing pattern, presence of a supernumerary cross vein in cell *R*₃, green cast to the body, etc.

Holotype, ♂, Callanga, Peru, in the Hungarian National Museum.

(1) Enderlein, Zool. Jahrbuch., vol. 32, pt. 1, pp. 75, 76, fig. W¹; 1912.

Genus *Rhipidia* Meigen.

1818. *Rhipidia* Meigen, System. Besch., vol. 1, p. 153.

Rhipidia domestica angustifrons Alexander (1912).

Alexander, Bull. Brook. Ent. Soc., vol. 8, pp. 16, 17; pl. 1, fig. ♀.

One ♀ from Callanga, Peru.

Rhipidia, sp.

One ♀ from San Bernardino, Paraguay. Fiebrig, 1908. It is allied to *domestica* but the antennæ are entirely lacking and closer identification is impossible.

Rhipidia, sp.

One ♀ from Asuncion, Paraguay. Vezényi, 1904.

Genus *Geranomyia* Haliday.

1833. *Geranomyia* Haliday; Entomol. Magaz., vol. 1, p. 154.

Geranomyia valida Loew. (Pl. XIV, Fig. 2).

1851. *Aporosa valida* Loew.; Linnæa Entomologica, vol. 5, p. 398.

One ♀, Concepcion, Chile, 1903; P. Herbst, coll.

A few additional details to Loew's characterization may be given. Proboscis split at tip, each lip recurved, the palpi very short and stout. Legs stout, coxæ, trochanters and femora yellowish, not darkened; tibiæ yellowish brown; tarsi, segments 1-3, brownish yellow, narrowly brownish at the tip of each, segments 4 and 5, brown. Wing venation (see plate XIV, fig. 2). Length, about 6.5 mm.; wing, 9.6 mm.; rostrum, 2.2 mm.

Geranomyia numenius, sp. n. (Pl. XIV, Fig. 3).

Rostrum long, thorax reddish brown, the præscutum with three pale vittæ and a dark brown median stripe; femora with a dark subapical ring; wings spotted, *Sc* long.

Female.—Length (excluding rostrum), 9.3 mm.; wing, 9.2 mm.; proboscis, 6.2 mm.

Proboscis dark brownish black; antennæ almost black, the flagellar segments elongate-cylindrical; front, vertex and occiput grey.

Pronotum light grey with a broad dark brown median vitta. Mesonotal præscutum rich reddish brown divided by three pale longitudinal whitish grey stripes, the median one broad and bisected by a narrow dark brown line which begins just behind the front margin of the sclerite and runs to the suture, the pale lateral vittæ narrow, enlarged at their anterior end before the pseudosutural fovea and run to the suture; scutum, scutellum and postnotum rich reddish brown, the latter with a paler median line. Pleuræ pale testaceous brown, darker

on the mesopleuræ, more greyish behind. Halteres, stem pale, knob brown.

Legs, coxæ and trochanters dull yellow, femora light brownish yellow with a rather broad subapical ring, tibiae light brown, the tip a little darker; tarsi brown.

Wings slightly infuscated with four brown marks along the costal region, the second at the origin of *Rs*, the third at the tip of *Sc*, the fourth at the stigma; pale greyish seams along the cord and along the outer end of cell 1st *M*₂. Venation (see plate XIV, fig. 3); *Sc* long, ending opposite or beyond the middle of *Rs*; *Sc*₂ equal to *Sc*₁; *Rs* rather long, strongly arcuated at its origin. There is a supernumerary cross vein in cell *Sc* between the base of the wing and the origin of the sector, such a condition being rather frequent in this genus.

Abdominal tergites dark brown, sternites much paler, yellowish.

Holotype, ♀, Callanga, Peru.

Paratype, ♀, Callanga, Peru.

Types in the Hungarian National Museum.

The paratype lacks the blackish median præscutal vitta.

G. numenius is allied to *insignis* Loew (1), but the antennal flagellum is black, not brown; thorax without three clear opaque brownish black stripes, etc.

***Geranomyia cinereinota*, sp. n.** (Pl. XIV, Fig. 4).

Rostrum short; thoracic notum grey with a well defined blackish median stripe; femora uniform in color, wings subhyaline.

Male, length (excluding rostrum), 5.1 mm.; wing, 6.8 mm.; rostrum, 1.8 mm. Female, length (excluding rostrum), 5.2 mm.; wing, 7 mm.

Male.—Proboscis short, scarcely extending beyond the wing basis, dark brownish; antennæ dark brown; head grey densely clothed with long, black hairs.

Cervical sclerites blackish with a little greyish bloom. Mesonotal præscutum grey with a broad brownish black median stripe, the sides of the sclerite darkened, almost black, the ground color brightest in front on either side of the median vitta, more suffused with brownish behind; scutum, scutellum and postnotum light grey. Pleuræ grey suffused with darker. Halteres short, yellowish, the knob brown.

Legs, coxæ and trochanters yellowish, femora dull yellow, tibiae light brown, tarsi brown.

Wings subhyaline, iridescent, veins *C*, *Sc* and *R* more yellowish, remaining veins brown. Venation (see Plate XIV, fig. 4).

Abdominal tergites dark brown, sternites dull yellowish.

In the *female* the rostrum is even shorter, scarcely exceeding the antennæ in length.

1. Loew, H.—*Linnaea Entomologica*, vol. 5, p. 395, (1851).

Holotype, ♂, Coroico, Bolivia.

Allotype, ♀, with the type.

Paratypes, 40 ♂ ♀, Bartica, Brit. Guiana (H. S. Parish, coll.).

Types in the Hungarian National Museum; paratypes in author's collection.

G. cinereinota is allied to *diversa* O. S. of the Eastern U. S., but has a long *Sc.*, and a different thoracic- and wing-pattern.

***Geranomyia scolopax*, sp. n.**

Rostrum short, barely exceeding the antennæ in length; thoracic notum greyish brown with dark brown stripes; legs uniform; wings hyaline with three brown costal spots.

Male.—Length, 5.3 mm.; wing, 7 mm.

Proboscis short, scarcely longer than the antennæ, dark brown; antennæ dark brownish black; head grey.

Mesothoracic præscutum greyish brown, with an ill-defined, darker median stripe and the lateral margin of the sclerite dark brown, this color being the continuation of the dark propleuræ, scutum dark brown; scutellum and postnotum a little lighter. Pleuræ light brown with a broad greyish brown band extending the length of the thorax above the base of the halteres and below the wing root, becoming confluent with the postnotum. Halteres pale, the knob a little brown.

Legs, coxæ and trochanters yellow, fore femora dull yellow, tibiæ and tarsi brown; middle and hind legs brown excepting the coxæ and trochanters which are yellow.

Wings hyaline, or nearly so, with a distinct oval, brown stigma, a brown cloud at the fork of *Sc* including the base of *Rs*, cell *Sc* with a brown cloud at one-half its length. Venation: *Sc* rather short, ending a little beyond the origin of *Rs*; *Sc*₂ at the tip of *Sc*₁; basal deflection of *Cu*₁ at the fork of *M*.

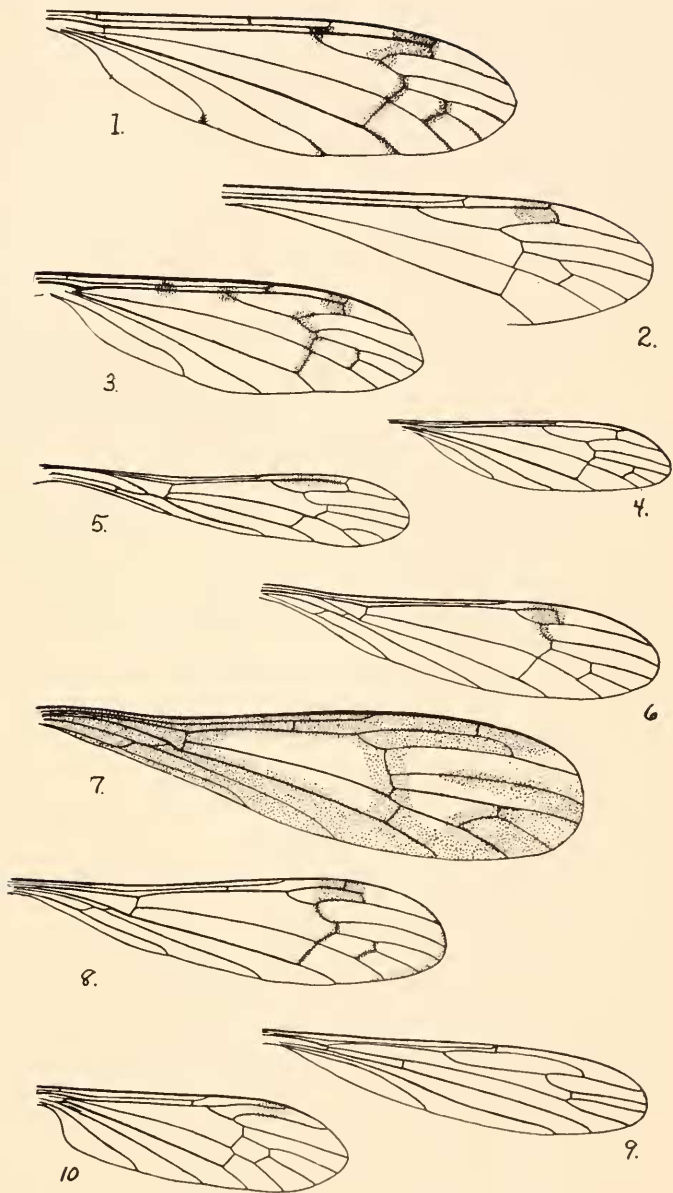
Abdominal tergites rich brown, the extreme base of each segment pale; the lateral edge and an indistinct median vitta brown; sternites brown.

Holotype, ♂, Callanga, Peru, in the Hungarian National Museum.

Closest to *cinereinota*, sp. n., but with distinct spots on the wing and with the median præscutal stripe ill-defined.

Genus ***Peripheroptera*** Schiner.

1866. *Peripheroptera* Schiner; Verh. Zool. bot. ges. Wien; vol. 16, p. 933.



NEOTROPICAL TIPULIDAE—ALEXANDER.

This remarkable genus of flies is apparently confined to the tropics of South America. Specimens are rare in collections and the few that have been taken are all contained in European museums. The peculiar characters of the genus, for the most part alar and venational, are thoroughly discussed by Osten Sacken in the second part of his "Studies on Tipulidæ" (Berl. Ent. Zeitschr., vol. 31, pp. 174-177). The present collection contained specimens of four species of which three are herein considered as new.

Key to the Species of Periphroptera.

1. Cell 1st *M*₂ open; [thorax black shining; inner end of cell *R*₃ anterior to that of cell *R*₅] (Brazil, Bolivia).

incommoda O. S. (1)

Cell 1st *M*₂ closed, i. e., crossvein *m* present 2
2. Body color shining pitch black 3

Body color more or less reddish or yellowish 4
3. Inner ends of cells *R*₃, *R*₅ and 1st *M*₂ about in a straight line; femora yellow basally darkening into brown at the tip. (South America) *aberrans* Schin. (2)

Inner ends of cells *R*₃ and 1st *M*₂ much farther proximad than the inner end of cell *R*₅; legs black. (Peru).

teucholaboides sp. n.
4. Wings conspicuously margined with brown all around; a broad brown seam along the cord; [cell 1st *M*₂ elongated; inner ends of cells *R*₃, *R*₅ and 1st *M*₂ in a line.] (Peru).

cuadorac sp. n.

Wings hyaline or suffused with yellowish; no distinct brown caudal margin to the wing 5
5. Inner ends of cells *R*₃, *R*₅ and 1st *M*₂ nearly in a line. (Brazil).

schineri O. S. (3)

Inner ends of cells *R*₃, *R*₅ and 1st *M*₂ not in a line, that of *R*₅ being much farther distad 6
6. Abdomen entirely light brownish yellow; triangular basal cell (♀) very much shorter than cell *R*. (Peru)..... *arcuata* sp. n.

Abdomen darkened toward the tip; triangular basal cell (♂ ♀) almost as long as cell *R*. (Colombia)..... *nitens* Schin. (4)

(1) Osten Sacken, Berl. Ent. Zeitschr.; vol. 31, p. 176 (1887).

(2) Schiner, Novara Reise, Dipt., p. 43 (1868) (as *Rhamphidia*).

(3) Osten Sacken, Berl. Ent. Zeitschr.; vol. 31, p. 177 (1887).

(4) Schiner, Novara Reise, Dipt., p. 47, pl. 2, fig. 3 (1868) (type of the genus).

Peripheroptera incommoda Osten Sacken (Pl. XIV, Fig. 5).

One male from Coroico, Bolivia, agrees very well with the original description of this species. It measures 3.5 mm. in length of body and 5.4 mm. in wing length. I include a figure of its venation. (See Plate XIV, fig. 5).

Peripheroptera teucholaboides, sp. n. (Pl. XIV, Fig. 6).

Head dull brown; thorax shining black; wings hyaline with a small brown stigma.

Male.—Length, 4.8 mm.; wing, 6 mm.

Rostrum and palpi dark brown; antennæ dark brownish black, the flagellar segments short, rounded; front, vertex and occiput dull reddish brown.

Thoracic dorsum shining black; pleuræ black, with a bluish grey bloom on the mesopleuræ. Halteres brown, the base of the stem lighter.

Legs long and slender, entirely black.

Wings hyaline, a small dark brown stigma and a narrow seam of the same color on the deflection of *R* 4 plus 5; veins brown. Venation (see Plate XIV, fig. 6), triangular basal cell very short and small; *Sc*1 ends just before the origin of *Rs*; deflection of *R* 4 plus 5 a little shorter than *Rs* but strongly arcuated; inner end of cell *R*5 farther distad than those of *R*3 and 1st *M*2; basal deflection of *Cu*1 at fork of *M*. Anal angle of the wing feebly indicated.

Abdomen shiny black.

Holotype, ♂, Callanga, Peru, in the Hungarian National Museum.

P. teucholaboides bears a strong superficial resemblance to *Dicranomyia moriodes* O. S. (East. U. S.) and to certain of the tropical forms of *Teucholabis*. It is much nearer to the normal Limnoline type than any of the other known species of the genus in that the male venation and alar characters are about as in the females of the other species, i. e., small triangular basal cell, small stigma, indication of an anal angle to the wing, etc.

Peripheroptera eudorae, sp. n. (Pl. XIV, Fig. 7).

Thorax reddish; wings margined all around with brown, a broad brown seam along the cord.

Male.—Length, 5.4-6 mm.; wing, 8.2-10.1 mm.

Rostrum and palpi reddish brown; antennæ, first segment brown, remaining segments dark brownish black; front, vertex and occiput shiny reddish chestnut, the occiput rather narrowed caudad to meet the elongated cervical sclerites, genæ yellowish brown.